

**[CLAIMS]**

[Claim 1] A dishwasher comprising:

a sump for holding washing water;

a washing pump for pumping the washing water to provide a portion of the washing water to dishes to be washed through a main flow passage; and

a turbidity sensing means for sensing turbidity of the washing water,

wherein the turbidity sensing means is positioned at a sampling flow passage through which the other portion of the washing water passes.

[Claim 2] The dishwasher as claimed in claim 1, further comprising a soil chamber in the sump for filtering the washing water, and the sampling flow passage is in communication with the sampling flow passage.

[Claim 3] The dishwasher as claimed in claim 2, wherein the sampling flow passage includes a flow passage expanded portion at which the turbidity sensing means is positioned.

[Claim 4] The dishwasher as claimed in claim 3, wherein the turbidity sensing means includes a light receiving device and a light emitting device for sensing turbidity of the washing water in a sensing flow passage formed between the light receiving device and the light emitting device.

[Claim 5] The dishwasher as claimed in claim 3, wherein the turbidity sensing means has a top lower than a height of the sampling flow passage.

[Claim 6] The dishwasher as claimed in claim 4, wherein the turbidity sensing means further includes a sensing means housing for housing the light receiving device and the light emitting device, and the sensing means housing having a sensing flow passage portion for providing a sensing flow passage between the light receiving device and the light emitting device.

[Claim 7] The dishwasher as claimed in claim 4, wherein the turbidity sensing means is mounted such that the sampling flow passage and the sensing flow passage have a predetermined angle with respect to each other.

[Claim 8] The dishwasher as claimed in claim 4, wherein the sensing means housing has a sensing means fastening portion formed thereon, and the sump has a sensing means mounting portion on an outside for fastening to the sensing means fastening portion,

wherein the sensing means mounting portion has an insertion opening for pass through of a portion of the turbidity sensing means where the light receiving portion and the light emitting portion are.

[Claim 9] The dishwasher as claimed in claim 8, wherein the sensing means mounting portion includes fastening projections, and the sensing means fastening portion includes fastening holes in conformity with the fastening projections.

[Claim 10] The dishwasher as claimed in claim 9, wherein the sensing means fastening portion is formed of an elastic member.

[Claim 11] The dishwasher as claimed in claim 8, wherein the sensing means mounting portion has a female thread formed in an inside surface, and the sensing means fastening portion has a male thread in conformity with the female thread.

[Claim 12] The dishwasher as claimed in claim 2, further comprising;

a lower housing having the soil chamber;

an upper housing for forming the sampling flow passage; and

a cover mounted to cover an upper portion of the sump, having a filter arranged thereon in correspondence to the soil chamber, and recovery holes arranged in correspondence to the sump for recovery of the washing water.

[Claim 13] A method for controlling a dishwasher comprising the steps of:

putting a washing pump into operation;  
detecting turbidity of the washing water;  
adjusting a washing time period preset at a control unit according to the turbidity  
detected thus; and  
operating the washing pump according to the washing time period adjusted thus.

[Claim 14] The method as claimed in claim 13, wherein the step of detecting turbidity of the washing water includes the step of determining operation of the washing pump for a predetermined time period before detecting the turbidity of the washing water.

[Claim 15] A method for controlling a dishwasher comprising the steps of:  
putting a washing pump into operation;  
detecting turbidity of the washing water;  
draining a portion of the washing water by operating a drain pump if it is determined that the turbidity detected thus is higher than a turbidity range preset at a control unit; and  
supplementing the washing water as much as the drain portion of the washing water.

[Claim 16] The method as claimed in claim 15, wherein the step of detecting turbidity of the washing water includes the step of determining operation of the washing pump for a predetermined time period before detecting the turbidity of the washing water.

[Claim 17] The method as claimed in claim 15, further comprising the step of stopping the washing pump at the time of draining, and supplementing the washing water.

[Claim 18] The method as claimed in claim 15, further comprising the step of adjusting an amount of draining of the washing water according to the turbidity detected thus.

[Claim 19] The method as claimed in claim 15, further comprising the steps of:  
re-detecting the turbidity of the washing water after the washing water is supplemented;  
adjusting a washing time period preset at the control unit according to the turbidity re-detected thus; and  
operating the washing pump according to the adjusted washing time period.

[Claim 20] The method as claimed in claim 19, wherein the turbidity of the washing water is re-detected if a predetermined time period is passed after the supplementation of the washing water.